AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

1-21. (Canceled)

22. (New) An electrical component, comprising:

a first conductive structure;

a second conductive structure;

at least one feedthrough including one of a right prism and a right cylinder;

a base element provided with at least one feedthrough that connects, continuously at least for high-frequency electromagnetic waves, the first conductive structure, the first conductive structure extending on or in a vicinity of an upper side of the base element, to the second conductive structure, the second conductive structure extending on or in a vicinity of a lower side of the base element, wherein each one of the first conductive structure and the second conductive structure includes a planar waveguide.

23. (New) The electrical component as recited in Claim 22, wherein the electrical component is one of a high-frequency microelectronic component and a microelectromechanical component.

24. (New) The electrical component as recited in Claim 22, wherein each one of the first conductive structure and the second conductive structure includes a coplanar waveguide

25. (New) The electrical component as recited in Claim 22, wherein the at least one feedthrough is one of filled and lined with an electrically conductive material corresponding to a metal.

26. (New) The electrical component as recited in Claim 22, wherein:

the base element is flat at least in a vicinity of the at least one feedthrough, and

the at least one feedthrough extends perpendicularly to a plane spanned by the vicinity of the base element that is flat and penetrates through the base element.

27. (New) The electrical component as recited in Claim 22, wherein the at least one feedthrough is etched into the base element using a plasma etching method and then one of filled and lined with an electrically conductive material.

28. (New) The electrical component as recited in Claim 22, wherein the at least one feedthrough is one of round, oval, square, and rectangular in plan view.

29. (New) The electrical component as recited in Claim 22, wherein at least one of:

the at least one feedthrough occupies in plan view an area of 400 μm^2 to 40,000 μm^2, and

the at least one feedthrough has a diameter of 20 μm to 200 μm, in particular 40 μm to 100 μm.

30. (New) The electrical component as recited in Claim 29, wherein:

the at least one feedthrough occupies in plan view an area of 1,600 μm^2 to 10,000 μm^2, and

the at least one feedthrough has a diameter of 40 μm to 100 μm.

31. (New) The electrical component as recited in Claim 22, wherein the base element has, in a region of the at least one feedthrough, a thickness of 100 μm to 650 μm.

32. (New) The electrical component as recited in Claim 22, wherein the base element includes a high-resistance silicon disk having a specific electrical resistance of more than 1000 Ω/cm

33. (New) The electrical component as recited in Claim 22, further comprising:

a dielectric by which the first conductive structure and the second conductive structure are separated.

34. (New) The electrical component as recited in Claim 22, wherein:

the dielectric includes a patterned dielectric layer.

35. (New) The electrical component as recited in Claim 33, wherein:

the dielectric, the first conductive structure, the second conductive structure, and the at least one feedthrough form a capacitor having a capacitance of 0.05 pF to 4 pF.

36. (New) The electrical component as recited in Claim 35, wherein:

the capacitance is 0.1 pF to 2 pF.

37. (New) The electrical component as recited in Claim 33, wherein:

the dielectric includes a silicon oxide layer having a thickness of 45 nm to 1800 nm.

38. (New) The electrical component as recited in Claim 37, wherein:

the dielectric includes a silicon oxide layer having a thickness of 90 nm to 900 nm.

39. (New) The electrical component as recited in Claim 22, wherein:

the at least one feedthrough includes a first feedthrough, a second feedthrough, and a third feedthrough,

the first conductive structure includes an upper coplanar waveguide having:

a first upper ground lead,

an upper signal lead, and

a second upper ground lead, the first upper ground lead, the upper signal lead, and the second upper ground lead extending at least locally parallel to one another,

the second conductive structure includes a lower coplanar waveguide having:

a first lower ground lead,

a lower signal lead, and

a second lower ground lead, the first lower ground lead, the lower signal lead, and the second lower ground lead extending at least locally parallel to one another,

the first upper ground lead is connected to the first lower ground lead by way of the first feedthrough,

the second upper ground lead is connected to the second lower ground lead by way of the second feedthrough,

the upper signal lead is connected to the lower signal lead by way of the third feedthrough, and

the third feedthrough is offset with respect to the first feedthrough and the second feedthrough.

40. (New) The electrical component as recited in Claim 39, wherein in plan view, the offset of the third feedthrough on the base element is 50 μm to 300 μm.

41. (New) The electrical component as recited in Claim 39, wherein in plan view, the offset of the third feedthrough on the base element is 150 μm.

42. (New) The electrical component as recited in Claim 22, wherein one of the first conductive structure and the second conductive structure locally has a capacitative component, corresponding to an interdigital capacitor, for further HF compensation.

43. (New) The electrical component as recited in Claim 22, further comprising:

one of an electrical component and a sensor element provided on an upper side of the base element and capable of being electrically activated by way of the at least one feedthrough from the lower side of the base element.

44. (New) The electrical component as recited in Claim 43, wherein:

the at least one feedthrough includes at least two feedthroughs,

the one of the electrical component and the sensor element is capable of being activated by way of the at least two feedthroughs, and

the at least one of the electrical component and the sensor element includes a high-frequency microelectronic or a microelectromechanical component such as a high-frequency diode or a high-frequency transistor, a micromechanically fabricated short-circuit switch for high-frequency electromagnetic waves, or a micromechanically fabricated sensor element.

45. (New) The electrical component as recited in Claim 22, wherein the electrical component is provided, on the upper side of the base element, with a hermetically sealed capsule.

46. (New) A method for producing an electrical component including a feedthrough for high-frequency electromagnetic waves through a base element, the method comprising:

applying an electrically conductive layer at least locally on an upper side of the base element;

applying an etching mask on a lower side of the base element;

etching at least one trench, having at least almost perpendicular sidewalls and penetrating through the base element, into the base element by the etching mask in a plasma etching step;

applying the electrically conductive layer at least locally on the lower side after the etching and after removal of the etching mask; and

one of at least largely filling and at least largely lining the at least one trench with an electrically conductive material by electroplating deposition.

47. (New) The method as recited in Claim 46, wherein the electrically conductive layer is produced by one of deposition and sputtering of a metal suitable for subsequent electroplating reinforcement, and is patterned in accordance with a conductive structure) to be produced on at least one of the upper side and the lower side.

48. (New) The method as recited in Claim 47, further comprising:

applying a photoresist that is photolithographically patterned as the etching mask.

49. (New) The method as recited in Claim 46, wherein after the at least one trench is etched in, photoresist masks are applied on both sides of the base element, and metal conductive structures in the form of planar waveguides are deposited by electroplating on the upper side and the lower side together with the electrically conductive material.

50. (New) The method as recited in Claim 46, further comprising:

locally depositing a dielectric layer, adapted in plan view to an area of the feedthrough to be produced or slightly larger, on the upper side of the base element prior to deposition there of the electrically conductive layer.

51. (New) The electrical component as recited in Claim 22, wherein the electrical component is sued to create low-loss high-frequency crossovers.